

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 October 2001 (18.10.2001)

PCT

(10) International Publication Number
WO 01/076552 A3

(51) International Patent Classification⁷: **A61K 7/50,**
7/48, 7/06

(21) International Application Number: **PCT/US01/40480**

(22) International Filing Date: **11 April 2001 (11.04.2001)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
09/547,595 **11 April 2000 (11.04.2000)** **US**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KB, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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Published:
— *with international search report*

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(88) Date of publication of the international search report:
19 September 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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WO 01/076552 A3

(54) Title: **STABLE AQUEOUS SURFACTANT COMPOSITIONS**

(57) Abstract: A stable, aqueous composition containing a substantially crosslinked alkali-swellable acrylate copolymer rheology modifier, a surfactant, an alkaline material, and various compounds therein, as for example substantially insoluble materials requiring suspension or stabilization, such as a silicone, an oily material, or a pearlescent material. Additionally, this invention also relates to the formation of a rheologically and phase stable cationic hair dye composition. The invention further relates to the incorporation of an acidic material after the addition of an alkaline material to reduce the pH of the composition without negatively impacting the viscosity of the composition.

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 01/40480

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K7/50 A61K7/48 A61K7/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 024 946 A (DUBIEF CLAUDE ET AL) 15 February 2000 (2000-02-15) column 7, line 37 - line 56; claims 1,2,9,10,15,17; examples ---	1-3, 6-10, 13-15, 17,48-50
A	EP 0 463 780 A (UNILEVER PLC ;UNILEVER NV (NL)) 2 January 1992 (1992-01-02) cited in the application page 4, line 37 -page 5, line 31; claims 1,5-8,13 --- -/--	1-3,5,7, 9-26, 35-38, 42-51



Further documents are listed in the continuation of box C.



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Date of the actual completion of the international search

20 November 2001

Date of mailing of the international search report

28/11/2001

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International Application No

PCT/US 01/40480

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 658 577 A (FOWLER TIMOTHY JOHN ET AL) 19 August 1997 (1997-08-19) column 18, line 18 -column 19, line 46; claims 1,7,10; example 5 -----	1-5,7,9, 10, 13-18, 40-44, 48-50
A	US 4 529 773 A (DUPRE JEAN ET AL) 16 July 1985 (1985-07-16) cited in the application claims 1,6; table II -----	1-5, 52-56

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 01/40480

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6024946	A	15-02-2000	FR 2676923 A1	04-12-1992
			AT 126429 T	15-09-1995
			AU 669330 B2	06-06-1996
			AU 1883592 A	08-01-1993
			CA 2110571 A1	10-12-1992
			DE 69204162 D1	21-09-1995
			DE 69204162 T2	18-01-1996
			EP 0587637 A1	23-03-1994
			ES 2075701 T3	01-10-1995
			WO 9221316 A1	10-12-1992
			JP 6510273 T	17-11-1994
EP 0463780	A	02-01-1992	GB 2245279 A	02-01-1992
			AT 133064 T	15-02-1996
			AU 636231 B2	22-04-1993
			AU 7846091 A	02-01-1992
			BR 9102568 A	21-01-1992
			CA 2022901 A1	21-12-1991
			DE 69116448 D1	29-02-1996
			DE 69116448 T2	20-06-1996
			EP 0463780 A2	02-01-1992
			ES 2082139 T3	16-03-1996
			GR 3019253 T3	30-06-1996
			IN 171889 A1	30-01-1993
			JP 1900717 C	27-01-1995
			JP 4243812 A	31-08-1992
			JP 6021051 B	23-03-1994
			KR 9614778 B1	19-10-1996
			US 6106816 A	22-08-2000
			ZA 9104743 A	24-02-1993
US 5658577	A	19-08-1997	US 5534265 A	09-07-1996
			AT 186208 T	15-11-1999
			AU 705770 B2	03-06-1999
			AU 3330195 A	22-03-1996
			CA 2198476 A1	07-03-1996
			CN 1159160 A	10-09-1997
			CZ 9700601 A3	13-08-1997
			DE 69513183 D1	09-12-1999
			EP 0777465 A1	11-06-1997
			JP 10505062 T	19-05-1998
			WO 9606596 A1	07-03-1996
US 4529773	A	16-07-1985	AT 18251 T	15-03-1986
			AU 552193 B2	22-05-1986
			AU 1254083 A	22-09-1983
			CA 1203140 A1	15-04-1986
			DE 3362231 D1	03-04-1986
			EP 0089213 A2	21-09-1983
			JP 1783394 C	31-08-1993
			JP 4075278 B	30-11-1992
			JP 58189299 A	04-11-1983

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